DOCUMENT RESUME

ED 181 688 EC 122 822

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TITLE Adolescents and Learning Disability: An Approach to Treatment.
PUB DATE Sep 79
NOTE 19p.; Paper presented at the Annual Convention of the American Psychological Association (87th, New York, NY, September, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adolescents; *Behavior Change; Case Studies; Dyslexia; Exceptional Child Research; *Identification; *Intervention; *Learning Disabilities; Neurological Organization; *Psychotherapy; *Remedial Instruction

ABSTRACT

A treatment approach to adolescents with learning disabilities which incorporates remediation and psychotherapy is explored through two case studies of two youngsters (ages 14 and 17). After a review of earlier studies, the author focuses on the diagnosis and treatment of a 17 year old boy with a ninth grade education. Once a diagnosis of dyslexia was made, a treatment plan involving an explanation of the problems and remediation of the dyslexia symptons was undertaken. After a year, test scores in reading, spelling, and arithmetic had all gained from 3.4 years to 4.2 years. Low self esteem diminished and medication was no longer required to control the child's behavior. Case Study Two is of a 14 year old girl with a third grade education diagnosed as schizophrenic. Tests revealed that neurological dysfunction of the left cerebral hemisphere was present, resulting in a disability in the processing of verbal information and phonetic material. Currently the girl is able to function for the first time in years without medication. (PHR)

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Adolescents and Learning Disability - an Approach to Treatment

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The concept of Specific Learning Disability (SLD) was developed by psychologists and educators who wanted to distinguish the underachiever of normal intelligence from the mentally, emotionally disturbed, or the physically handicapped.

"Children with SLD exhibit a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance or to environmental deprivation (The National Advisory Committee on Handicapped Children, 1968").

Medical profession prefers to use the term Minimal Brain Dysfunction (MBD) syndrome rather than SLD syndrome. Thus, SLD and MBD are interchangeable terms for the same syndrome although it seems that MBD suggests broader connotations since it can be applied to children as well as to adults, while SLD is usually

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restricted to the school population. The neurologic concept of SLD is based on clinical observations of deficits in speech, language, perception and memory. Since it is reasonable to accept that all human learning takes place in the central nervous system (CNS) any deficits in ability to acquire specific skills - if there are no peripheral problems- presupposes dysfunction or damage in the CNS. But the sciences of neurology, psycho-neurology, biochemistry, or physiology have not yet developed the techniques necessary to definitely diagnose the presence or absence of neurological damage in CNS because SLD represents a complex phenomenon representing malfunctioning of information processing, storage, and retrieval systems in which heredity, environment, and neurological problems are closely inter-related. Therefore, SLD children would seldom exhibit discrete symptoms of cerebral pathology but rather the majority will show diffuse symptoms of brain dysfunction with little possibility of definite localization. Possible enzymes or other biochemical deficiencies of a genetic nature as the basis for SLD (MBD) have been also proposed (Bannatyne, 1973).

In terms of behavior correlates, the SLD is a multifaceted disability that interacts subtly and in quite variable ways in different personalities and in various environments or social contexts (Bellak, 1977). If recognized early SLD can be treated, often with great success, if not recognized and not/or mistreated SLD may have devastating effect on personality development and social competence. SLD in younger children has been studied

quite extensively in the last two decades, but it is only recently that its significance has been acknowledged in adolescence (Hussey and Cohen, 1976). When it, however, plays etiological, pathogenic or merely concurrent role in emotional and social maladjustment of adolescence, its diagnostic, therapeutic, and prognostic value is of importance to professionals who are involved in the treatment of adolescent disorders.

Since, by definition, the SLD child is of normal or higher intelligence, he is quite aware of his failures in school and in his home. This awareness of failure creates stress and frustration which the SLD child must suffer because he is not in the position to remove himself from school related activities for more than a decade of his life. This situational stress becomes chronic and therefore psychopathogenic or psychotoxic in nature. No one is able to live under continuous stress without developing some sort of coping mechanisms. Prolonged frustration must bear a significant role in formation of personality traits, defense mechanisms, and ability to function in the society. There is, however, a paucity of psychological research designed to study this relationship between SLD and subsequent personal and social competence. As a consequence, there is little evidence on what happens to the SLD child when he grows older. A reason for the lack of research and interest in adolescents with SLD might be attributed to the fact that these youngsters were not considered a school liability by educational establishments until the P.L. 94-142 brought it

about (Federal Register, 1977, p. 42478). They become a problem to different social institutions, such as courts, correctional authorities, mental health hospitals, etc. These authorities, however, do not see or are not prepared to see a correlation between SLD and the behavioral problems of adolescence.

If a young child is experiencing SLD he is likely to develop motoric acting out in lieu of verbal communication (Bellak, 1977). Although acting out may satisfy his immediate needs, however, in the long run it will alienate him from his achieving peers and propells him on the margins of society. A corrolary of it is an irresistable want for blind revenge often evidenced in senseless destruction of public property. Who knows how many juvenile delinquents were brought about by chronic frustration originated in SLD? Only recently this kind of perceptually and/or cognitively impaired delinquents has been recognized. Swanson and Willis (1979) found that some of juvenile delinquents show many symptoms that have raised the possibility that SLD was a causative factor in this disorder. Berman and Siegal (1976) reported that out of 50 juvenile delinquents nearly three fifths showed evidence of at least one, but usually more than one, SLD symptoms.

Although some SLD youngsters may act out their frustration and develop sociopathological modes of existance, the others may act in and turn the anger and frustration on themselves. These individuals, psychopathogenetically tend to program themselves as failures which as a consequence leads to mental and severe emotional problems. At the beginning some behaviors may serve

to ward off anxiety but at the end the purpose and the source of it's origin is lost and the behavior perpetuates itself aimlessly and becomes manneristic and bizarre. It is difficult to estimate which problem - sociopathology or psychopathology - is more prevalent in SLD teenagers. Bellak (1977) indicated that MBD symptoms in adolescence and young adults might be masked by: (1) experiences gained in the adolescence period of their lives, (2) lack of the school history available to psychiatrists treating them for psychiatric problems. This masking occurs easy because they are out of the school curricula and their antisocial or psychotic behavior is more prominent, shadowing their SLD syndrome. Mental hospitals, as a rule seldom request the school records of their patients, and juvenile courts are usually not tuned to this kind of information. Additionally, the SLD term gives the impression that this is a purely educational matter. Cantwell (1972) reported that hyperactive children do not disappear but turn into hyperactive teenagers and adults who tend to run high incidents of alcoholism, drug addiction, prostitution, car accidents, and inability to hold a job or to stay in marriage. Generally, they contribute more people to social liability than their number would justify. The study of Borland & Heckman (1976) supported Cantwell's findings. Bellak (1977) suggested that MBD syndrome overlaps schizophrenia syndrome, and that a number of adolescents or adult patients referred to him as chronic schizophrenic, after careful examination turned out to be MBD people. Such symptoms as spatial disorientation, diffi-

culty to control impulses, deficits in reading, spelling, and an aversion to books were common among these patients. Problems of self boundry, when further investigated, led to laterality confusion and sensory overloading. Their school achievement was marred with a history of dyslexia and other SLD emotional disturbances often aggravated by physical awkwardness. Bellak (1977) asserted that virtually all these patients' families invariably suffered some sort of SLD. Psychiatric problems such as anxiety neurosis, hysteria, obsessive-compulsive, and manic-depressive illnesses as well as schizophrenia which do not respond to traditional psychiatric treatment and psychotherapy usually have a SLD component. Fish, et al (1965), analyzing early developmental profiles, identified infants vulnerable to schizophrenia only on the basis of their MBD syndrome. Later, at the age of 10 years these children were given psychological tests and those who were identified as vulnerable to schizophrenia showed significantly more psychopathology on the tests than the control subjects. There was a clear relationship between poor neurological integration in childhood and later emotional and mental dysfunctions.

The fact that MBD seems to be running in families may explain a number of reports indicating a genetic origin of schizophrenia. Thus in many cases schizophrenia is not a primary syndrome but an epiphenomenon of MBD or SLD. If such a severe disorder as schizophrenia could be caused by SLD the importance of its prevention is apparent. Development of schizophrenia in

late adolescence could stem from severe confusion in visual-spatial skills, disturbance of laterality, linguistic and cognitive abilities leading to impairment of thought processes, communication and consequently to social isolation. Difficulty in impulse control could be correlated with low stimulus tolerance which quickly leads not only to neurological but also emotional overloading.

Treatment of Adolescent SLD

Treatment of SLD is still in an experimental stage for younger children. There are many hypothetical constructs upon which the remedial methods are based. Unfortunately, proponents of one theory becomes often fanatically defensive of their methodology and do not see merits in another approach, who with perhaps similar fanaticism defend their own. Thus one remedial approach, accepted by one camp, might be totally rejected by the other camp. We have a great deal of panacea in education of SLD based on etiological positions which ranges from vitamin deficiency, motor programs, language development programs, to chemotherapy.

The adolescent with SLD presents significantly more difficult problems than the SLD child. By the time he reaches the adolescent period of his life he manages to develop severe emotional or behavioral problems and is very negativistic to any remedial approach. Before I propose some approaches to treatment of emotionally disturbed adolescents with SLD I would like to present two cases of adolescents whom I treated.

Case One

Billy, a 17-year-old white male, was referred to psychiatry

because of paranoid delusions and inability to function in school. In his delusions he thought he was possessed by the devil, and was afraid that he may do harm to mankind. Billy was a planned child, but delivery was long and difficult. His birth weight was 7 lbs. and 3 oz. As an infant Billy had a weak eye muscle, his eye lids drooped and he tended to close his eyes frequently. He did not have any specific disease but often ran high temperatures (104-105 F). He was a poor sleeper, very active, and difficult to toilet train. The toilet training was accomplished at the age of 4 years and 7 months. His developmental milestone seems to fall somewhat behind the norms. In kindergarten he had problems separating from his mother. Gradually he adjusted but developed an unusual attachment to his teacher, with whom he still is in contact. In primary school he had difficulty with reading and writing. He preferred oral language, both for listening and responding. His handwriting was never well developed. In the beginning of his fourth grade he was placed in a special class and received psychotherapy. By that time he already displayed behavioral problems such as stubborness, tantrums, unprovoked attacks on his peers, cursing his teachers, and making unusual facial grimaces. He was sent to a doctor who ordered a neurological examination and an EEG. Both proved to be negative. Vision and hearing was also tested and found to be within the normal range. Routine psychological tests revealed intelligence on the WISC within the normal range with higher than normal scores on Similarities and Information. There was a discrepancy between

Verbal and Performance tests but psychologists attributed it to emotional problems, explaining that Billy was an anxious and withdrawn child. He recommended continued psychotherapy with placement in a special class for the emotionally disturbed. Billy's father who was born in the Bronx, New York, discontinued his education in the 8th grade because he "did not like books". The mother, born and brought up in Manhattan, graduated from H.S. and then worked as an accounting clerk until the age of 21 when she got married. According to the mother, her husband often displayed violent behavior and short temper. Eventually a court order removed him from the family. During psychiatric treatment Billy received a battery of tests. The result of this evaluation is presented below.

Results of Psychoeducational Evaluation in May 1978

Name: Billy

Age : 17-2

Education: 9

Wechsler Adult Intelligence Scale	
VIQ	112
PIQ	83
FSIQ	100
Information	11
Comprehension	11
Arithmetic	10
Similarities	16
Digit Span	8
Vocabulary	11
Digit Symbol	7
Picture Completion	6
Block Design	8
Picture Arrangement	8
Object Assembly	7

Reorganized the WAIS' subtest (Bonnatyne, 1978) revealed spatial score of 21; sequential 23 and conceptual 37.

Halsteads Neuropsychological Test	
Category Test	50
Tactual Performance	
Right Hand	8.8
Left Hand	2.9
Strength of Grips	
Right Hand	30 kgs.
Left Hand	28.5 kgs.
Dominance Test	
Hand Dominance	R - 7
	L - 0
Foot Dominance	R - 2
	L - 0
Visual Dominance	R - 10
	L - 0

Wide Range Achievement Test

Reading	3.6
Spelling	2.9
Arithmetic	5.9

Examples of Spelling Errors

Maretrial for material
Soguestion for suggestion
Msueum for museum
desions for decision

The overall set of the tests suggested that in many respects this youngster was not seriously impaired. As indicated by normal intelligence and good score on the category test and very high on Similarities, the basic judgment of Billy was very good. His motor functions were generally adequate and show no striking sensory perceptual deficits. In many tasks of visual-spatial types of problem solving procedure Billy performed below average. These findings would suggest that Billy's right hemisphere might be less functional than his left. The picture of general visual-spatial dysfunction emerged clearly from all subtests' analysis. In comparison with visual-spatial tasks, his verbal performance was much better. A very high score on the Similarity test may reflect his potential, while most of other verbal score could be a result of relatively limited input from school. Analysis of his spelling errors indicate also inability to keep sequencies of graphemes to corresponding phonemes, suggesting visual-spatial and visual-sequential disability. These results point out the diagnosis of dyslexia caused by visual-spatial and visual-sequential weaknesses in the processing of the linguistic material in terms of phoneme-grapheme correspondence.

After this diagnosis was made, the treatment plan was changed. Psychotherapy was directed toward explanation of his problems in a realistic manner. Chemotherapy was shifted from phenothiazines to imipramine and small doses of heloperidal. The main psychotherapy was the remediation of his severe dyslexic symptoms utilizing his auditory and conceptual strengths. Billy responded very well. A year later his WRAT scores were as follow:

Reading - 7.8
Spelling - 6.9
Arithmetic - 9.5

His agitation and psychopathological grandiosity, designed to compensate for his low self esteem, decreased to a degree that no medication was required any more to control his behavior. At the present time he is receiving behaviorally oriented psychotherapy including biofeedback relaxation method, three times a week.

Case 2

Subject's name: O.B.
Age : 14-7
Sex : Female
Education : 3rd Grade

This young girl had been referred to a child psychiatrist at the age of eight years because of severe school phobia and extreme anxiety. The child managed to avoid school for most of her educational career because her psychiatrist's recommendation

was home tutoring

Psychiatric diagnosis

1972 - school phobia; r/o childhood schizophrenia

1973 - Schizophrenia Chronic Undifferentiated Type: r/o Schizophrenia Paranoid Type

Last diagnosis, 1978 - Schizophrenia CUT; r/o Character Disorder.

No attention was given to the possibility that her psychiatric problems might have been correlated with her school problems and learning difficulties until the age of 12. In 1978 she started to display severe emotional symptoms such as setting fires in the living room, engaging sexually with older men, and physically attacking her mother. The patient's mother's report indicated a symbiotic relationship between the daughter and the mother. The interviewing psychiatrist was especially impressed with the mother's report that she often could not leave the school when her daughter went to the classroom. It had been hypothesized that the mother's anxiety was transmitted to the child and that the child responded first with school phobia and then with psychotic reactions.

At the age of 14, the mother could not manage her daughter at home and O.B. was admitted to Inpatient Psychiatry and then to Day Treatment Center. At this time a full battery of psychological tests was administered with the following results:

Results of Psychological Evaluation, 2-30-78

Wechler's Intelligence Scale for Children - Revised

VIQ - 74
PIQ - 101
FSIQ - 85

Information	5
Similarities 1	10
Arithmetic	5
Vocabulary	7
Comprehension	2
Digit Span	7
Picture Completion	12
Picture Arrangement	11
Block Design	10
Object Assembly	11
Coding	7

Wide Range Achievement Test

Reading - 3.3
Spelling - 3.0
Arithmetic - 5.1

Examples of Spelling Errors

Edcate	for educate
Matrial	for material
Fatin	for fashion
Sjestin	for suggestion

Chosen Test from Halstead's Psychoneurological Battery for Children

Category - 61	: 61
Finger Tip Writing	: RH - 1; LH - 4
Coin Recognition	: RH - 1; LH - 1
Tactile Form Recognition	: RH - 2; LH - 0
Strength of grips	: RH - 11.6 kgs; LH -12.5 kgs.
Hand Dominance	: RH - 7; LH - 0
Foot Dominance	: RF - 2; LF - 0
Visual Dominance	: RE - 3; LE - 7

Psychological examination of this adolescent girl yielded results which ranged from a relatively adequate performance to ones indicating function deficits. With pronounced disparity in Verbal and Performance IQ values on the Wechsler, the Full Scale IQ became relatively meaningless. It is apparent that this girl has considerably greater intellectual ability in areas involving visual-spatial reasoning, and manipulatory types of problems than in the area of verbal fluency and social competance.

Disparities of Verbal and Performance IQ values of this type often imply selective impairment of intellectual abilities as a

result of brain dysfunction, particularly involving the left cerebral hemisphere. Comparing laterized performance it was found that although she was strongly right-handed and right-footed, she showed poorer performance with her right upper extremity than with her left. Her left eye was also dominant, indicating relatively weaker left visual cerebral functioning. All these findings imply more dysfunction of the left cerebral hemisphere than right. Therefore her difficulties with verbal input and output could be a result of some neurological dysfunction which brought about SLD. Analyzing O.B.'s spelling, reading and word comprehension errors it became clear that her skills were considerably impaired by a disability in processing of verbal information and phonetic material. It was concluded that O.B.'s emotional and psychiatric problems were secondary to her SLD. Interaction, however, of her disability with her personality created a plethora of mental and personality disorders. O.B. was referred to the Committee on the Handicapped for the development of a special program and her psychotherapeutic approach was changed from supportive and psychoanalytic in nature to cognitive and behavioral. Phenothiazine therapy was discontinued and O.B. is able for the first time in years to control herself without medication.

Conclusion and treatment guidelines

Whether SLD is etiologic, pathogenic or nearly coexistant with psychopathological conditions, it deserves special consideration by itself in terms of treatment. The following elaborations could

serve as treatment guidelines for adolescents with SLD.

1. Psychotherapy of an adolescent youngster with SLD should start with a careful explanation of the nature of his dysfunctions. Usually adolescents are not aware of having such problems if they were not treated properly in younger years. They feel and often they were told, that they have emotional problems or even a nervous breakdown. As a matter of treatment strategy it should be explained to the youngster affected that the problem in spatial-visual orientation, the way in which his senses process stimuli, his motor sensory problems and his impulsivity (stimulus overload) have an understandable neuropsychological explanation. It is crucial to discuss and explain secondary effects of SLD syndrome. The therapist should appeal to his cognitive rather than emotional faculties and explain that he is not "stupid" or "crazy" but rather that his occasional excessive emotions, his clumsiness in physical education, and some unusual phenomena, e.g., reversal of numbers or mirror writing as well as inability to follow directions given verbally or from maps are a part of the whole syndrome and can be managed if one is aware of them.

2. Development of appropriate individualized academic and remedial treatment plans utilizing his perceptual strengths for improvement of his perceptual weaknesses. When the SLD adolescent sees that he can learn as well as most of his friends, numerous emotional problems stemming from his frustration, anger and shame, would rapidly decrease.

3. Development of the specific ability to "read" signs in his body and feelings which may signal the approachment of troubles. It means that the therapist must teach him to become aware of the fact that certain circumstances, like too much stimulation (sensory overloading) may produce exaggerated responses and panic-like states. Under such circumstances the SLD patient should learn to remove himself from the situation and isolate himself physically from excessive stimuli. If physical removal is not possible he may be trained to "shut down" some of his senses, e.g., close his eyes, or cover his ears. He also could be trained in autogenic relaxation, a psychological method of isolation.

4. Bellak (1977); Wood et al (1976); Mann & Greenspan (1976) recommended the use of a small amount of imipramine and hydrocloride (Tofranil) alone or in combination with major tranquilizers, if psychotic problems are concurrent with SLD.

5. Special physical training such as eye-hand coordination, special visual-auditory instructions, and other general means to help the youngster to deal with SLD should be introduced as soon as possible.

6. The parents of such a youngster should be counselled about the problems and be advised that if they have younger children, to watch for the signs of MBD or SLD. They should be trained in language development skills, remedial reading and writing procedure as well as in physical education, to assist their children on a one-to-one basis.

7. Some authors such as Bellak (1977) suggest that genetic counselling should be considered for adults with a history of SLD during their child bearing years. These are only suggestions which seemed to work with our adolescent group.

The message which I wanted to give is that SLD children do not disappear when they leave the school system, but that they become social and/or psychiatric problems. Many of them need continued treatment well into their adulthood. Millichap (1977) indicated that particularly the children with problems of input, auditory receptive language, and reading difficulties need long continual help. Generally, the more problems there are of an output nature, the shorter the period of remediation. Our society needs to be prepared to help youngsters as long as they need remediation, through junior high, through secondary high and during their adulthood through community agencies, as appropriate. As it was demonstrated in the two case studies, educational and medical endeavors tend to be separated. The youngsters we had all had been on medication for years without any substantial changes in their behavior. Yet in seven to ten months, we did produce major changes in these children. It may often happen because the medical profession tends to ignore behavioral approaches favoring pharmacologicaltherapy for all maladies. Since the general populance is strongly influenced by the medical model, they often do not know that other approaches might be more beneficial for many problems especially those of an educational or social nature.

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